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Urinary Calculi in the Dog and Bitch.

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(Presented to the Central Veterinary Society.)

It has long been recognised that the canine subject is very prone to calculus formation in the urinary tract. Owing to the unnatural conditions under which the domestic animal is often kept various factors arise which are favourable to calculus formation. To appreciate these factors it is necessary to consider what is known of the ætiology of the calculus.

Antoine de Neyde, in 1686, first formulated the theory that a calculus must be deposited round a nucleus. Anton Nuck by introducing a piece of wood into the bladder of a dog showed that foreign bodies are apt to become encrusted with urinary salts.

Tuffier followed by showing that an aseptic *smooth* foreign body introduced into the urinary tract failed to act as a nucleus. The same worker then turned his attention to the conditions under which precipitation of the salts of urine took place. Varied diet and the ingestion of urates, phosphates and other substances failed to produce any deposit on sterile glass marbles. Deposition *did* take place, however, on rough bodies, especially when these were septic.

Ebstein carried out experiments to show that dead cells from tissue degeneration may function as a nucleus. According to this author, excessive elimination of toxic substances results in local cellular necrosis, and he with Nicolaier succeeded in bringing this about in the kidney by the oral administration of large doses of oxamide. In each case, this was followed by calculus formation.

These experiments were repeated and confirmed by Thomassen. Uric acid is claimed to act in the same way. According to Klimmer the principal condition for the development of urinary calculi is that the urine contains an excess of salts, which are eliminated and deposited on any foreign body within the urinary passages.

The conclusion to be drawn from these experiments is that a nucleus is essential and that, without it, calculus formation does not take place, whatever other factors may be operating. The nucleus in question is in nearly all cases microscopic—namely, dead tissue cells.

Diet.—The concentration and reaction of the urine is materially influenced on the one hand by the character and composition of the food, and on the other by the habits of the animal. To a carnivore the two essentials are meat dietary and abundant muscular exercise. Departure from these is at once reflected in the products of excretion and the character of the urine.

The urine is normally acid from the presence of the acid phosphates of sodium and calcium. According to Halliburton the degree of acidity increases with proteid metabolism (*i.e.*, meat diet), and with exercise. It may decrease even to the point of alkalinity with starchy (*i.e.*, biscuit) and vegetable dietary. It follows that irregularities of diet, with meat deficiency, result in changes of reaction in the urine which are favourable to the precipitation of inorganic salts.

Again, the urine may become alkaline as a result of the hydration of urea into ammonium carbonate. In this case earthy phosphates may be precipitated followed by the combination of magnesium phosphate with ammonia to form ammonium magnesium phosphate—a common type of calculus found in the dog.

This hydration of urea may take place as the result of bacterial action on urine which is stagnant through retention. Here, then, lack of exercise and sluggish habit will be a conducive factor. In this connection, one is reminded of the frequency of urethral concretions in the old neutered cat.

The early workers mentioned above did much to establish the function of a nucleus formation, and little has been discovered since to modify their views. Given a nucleus, the factors favourable to salt deposition are fairly obvious—namely, faulty metabolism, unnatural and sluggish habit, and bacterial infection. Some of the predisposing factors are common to all animals. Thus, in the horse Professor Axe stated that calculus formation was more common in ladies' hunters owing to long periods of retention. According to works on human surgery the condition is common among judges and other members of sedentary occupation. It is of interest to note that drunkards, with the possible exception of port wine drinkers, seem to escape, owing, no doubt, to frequent flushing of the bladder. The ram is a common subject in sheep practice. Here confined movement is combined with the vermiform structure of the penis to operate, as does the penial bone of the dog—*i.e.*, as a receptive channel for sediment.

The factors conducive to lithiasis are such that few preventive measures are open to the veterinary surgeon. Thus, in the case of the dietary factor, my experience has been that in a dog of recurrent

urolithic habit no variation of diet will prevent this recurrence.

Clinical importance of urinary calculi is more or less centred upon the urethra and bladder. In the first place these are by far the commonest seats; secondly, the condition is easily diagnosed, and thirdly, prognosis of operation is good.

Calculi do occur both in kidney and ureter, but they are not easily diagnosed apart from the Röntgen ray. When diagnosed the veterinary surgeon is not always allowed to operate, whereas the human surgeon must operate under nearly all conditions. In dealing with the dog, the question of humanity and the wishes of the owner have to be considered.

In a paper of this description no useful purpose is served by a discussion of the variations in conformation and chemical composition of the different calculi. Practically all the specimens I have brought have been analysed by Dr. Gardiner and found to be composed of triple phosphates.

Renal Calculi.

Symptoms of renal calculi during the life of the animal are not encountered very frequently in daily practice. The majority on record have been discovered *post-mortem*, symptoms having been absent during life, or, if present, have been overlooked. In such cases the calculi are found in the pelvis of one kidney which may be functionless and reduced to a mere shell. The other kidney is usually considerably enlarged in view of its double function.

Symptoms.—These, when they occur, are usually very acute—the outstanding feature being a vague abdominal pain. This is not continuous, but recurs in spasms at irregular intervals. During the attack there is a tendency to arch the back. The gait is stiff with a peculiar dragging action of the hind legs. Strangury and hæmaturia may be present, but not always. In a case recently encountered, the urine appeared normal to the naked eye and was passed without difficulty and with the usual frequency. A constant wagging of the tail was a noticeable feature.

Diagnosis.—Early in the case this may not be easy. Abdominal pain alone is of little value, but if it is accompanied by vesicular tenesmus, frequent micturition and hæmorrhage, the attention should, at least, be drawn to the urinary apparatus.

In the dog the urethra may be excluded by passage of the catheter, and in both sexes the bladder may be excluded by passage of the catheter or metal sound and by palpation through the abdominal wall.

By palpation it may be possible to discover a sensitiveness over the region of the kidney and in the very attenuated subject to discern abnormalities in the respective size of the organs. Palpation is often rendered difficult by the fat condition of the subject or by tension of the abdominal muscles. This tension may be overcome by the administration of chloroform or of morphine. This is a legitimate aid to diagnosis, but in the case of morphine at least is undesirable on account of the functional inhibition produced. Pain in the kidney is better established by digital pressure over the lumbar region.

Symptoms simulating rheumatism are fairly constant, and in some far advanced cases paraplegia has been known to appear. In the differential diagnosis one must be careful not to confound spinal neuralgia (neurosis) so common in the long-backed smaller breeds.

Blood of kidney origin may not discolour the urine on account of dilution, but microscopical examination will reveal the presence of blood cells and other cellular debris. The character of these cells may establish them as from the kidney. Previous history of any operation for cystic or urethral calculi will further strengthen any suspicion of calculus in the kidney.

The question may be finally settled by use of the Röntgen ray.

In taking the skiagraph it is always advisable to take two positions, namely, dorsal and lateral. The necessity for this is illustrated in X-ray 1 and X-ray 2. The shadow is distinct in the lateral position, whereas in the dorsal the outline is so hazy

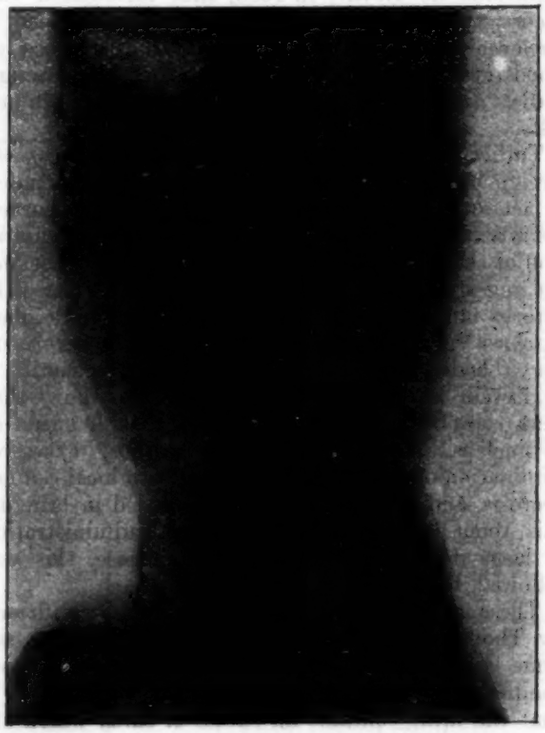

Fig. 1.—Calculus in Kidney. Dorsal position.

as to leave an element of doubt. On the other hand, the lateral skiagraph gives no clue as to which kidney is involved.

In such a case the calculus or calculi can only be located by exploratory laparotomy, which is the first stage in the operation proper. Having gained access to the peritoneum the position of the calculus is discovered either by digital pressure applied to each kidney in turn or by probing the respective organs with a sterile sewing needle.

Operation.—This cannot be undertaken lightly and should at least be deferred until palliative measures have been attempted. The aim of the practitioner is to produce results satisfactory to the client. A brilliant operation followed by the death of the patient does not achieve this end. There is always the possibility that the acute symptoms may abate under suitable treatment. The calculi cease to irritate and lie dormant in the atrophied kidney. The sound kidney assumes the whole function of excretion and no further trouble ensues. Recurrence, however, is usually fatal.

Fig. 2.—Calculus in Kidney. Lateral position.

Medicinal means having failed, hope of recovery lies in surgery. Choice of operation lies between nephrolithotomy and nephrectomy. The former consists of removing the calculus by incising the kidney, the latter in removing the whole kidney.

Nephrolithotomy cannot be advocated owing to the following disadvantages :—

1. Difficulty of operation, especially in the fat subject.
2. Difficulty of removing every vestige of concretion.
3. Danger of hæmorrhage.
4. Danger of tearing kidney by sutures and setting up excessive cicatricial tissue.
5. Danger of subsequent fistula of the organ.
6. Possibility of recurrence in an already damaged and sutured kidney.

Nephrectomy on the other hand is far simpler and offers a fair chance of success in a good subject, provided the remaining kidney is sound. In the very fat subject it may be necessary to operate from the flank, but apart from this it is easier and better to make a median incision. The patient is secured in the dorsal position and laparotomy performed. The affected kidney is carefully separated from its bed and two sterile silk sutures tied round the pedicle, taking care to include all the vessels. The kidney is then separated by cutting between these sutures. Great care must be exercised in the ligation as the risk of hæmorrhage is considerable. It is surprising how easily a ligature will slip off. Having examined both ureters and being assured that they are clear, the peritoneum and abdominal wall are closed in the usual way.

The Ureters.

The Ureters.—Calculi occur occasionally in the ureters, becoming lodged there in passage from kidney to bladder. Tuffier found concretions composed of oxalate of lime in the ureters during his experiments on artificial calculus production.

Specimen (exhibited) shows the kidney, ureter and bladder, all three containing calculi.

Such cases as this have led some authorities to believe that all calculi are primarily formed in the kidney, whence they descend to ureter and bladder. Personally I have never been able to discover any evidence in support of this. A specimen (exhibited) shows calculus in the bladder. The subject had been operated on twice previously within 18 months for the same condition. It will be seen, however, that kidneys and ureters are quite clear, although the kidneys show extensive disease. Faulty filtration of a diseased kidney may well be the starting point of calculus formation.

Symptoms.—Are if anything more obscure than those of renal lithiasis. Passage of the stone is marked by acute pain difficult to locate. This may subside and symptoms of hydronephrosis supervene, which are those of emaciation and progressive weakness.

Diagnosis.—Röntgen rays and exploratory laparotomy are the only two methods of certain diagnosis. In human surgery it is possible by the use of the urine segregator to determine which ureter is obstructed. In the dog this fails on anatomical grounds.

Treatment.—The contingency is rare and can only be relieved by operative interference.

Cystic Calculi.

Calculi may be present in the bladder either singly or in large numbers without producing any symptoms. One radiograph here is that of a skye terrier who showed no signs of inconvenience from March, 1915, when the photograph was taken, until June, 1921, when she died from other causes. This condition of tolerance is by no means rare and appears to depend upon the character of the calculus. According to French, uric acid calculi are less likely to cause symptoms than those of the triple phosphates. In other intermediate cases the symptoms are mild and intermittent. Another radiograph is that of a Pekingese nine years old who was not operated on till three months after

diagnosis, and then the only symptoms were frequent micturition and dirty habits in the house.

Taking an average of cases it is apparent that cystic calculi occur more in the smaller breeds than the larger, more in the bitch than in the dog, and more in the old than in the young. The *young male* of *large* breed is not immune, however. A specimen I have here was taken from the bladder of a male field spaniel eleven months old.

Cystic calculi appear to occur in many cases after cases of difficult parturition in the female. Whether this is due to infection from the vagina through the urethra or from disturbance in metabolism is difficult to say.

Symptoms.—The first sign of trouble is usually a frequent desire to urinate. There may be nothing more abnormal than the frequency. The dog, especially the female, will become dirty in the house although well-trained previously. The patient becomes very restless and frequently micturates, passing small quantities of urine which may or may not be blood tinged, according to the degree of damage to the bladder wall. As the irritation increases there is general uneasiness, straddling gait and perhaps actual pain. If not relieved there will follow progressive symptoms of hæmorrhage, loss of appetite, emaciation, rise of temperature, and accelerated pulse due to the cystitis set up.

Diagnosis.—This offers no great difficulty. Unless very small, the calculus or calculi can usually be felt through the abdominal wall by palpation. Digital examination per rectum may be of assistance when the bladder is not over-distended with urine.

Fig. 3.—Calculus in Bladder.

Multiple calculi may be heard to rattle together sometimes, but the possibility of swallowed pebbles in the intestine must not be forgotten (Figs. 3 and 4).

Fig. 4.—Swallowed Stone in Intestine.

This question may be settled by the combined use of the rectal and vesical sound. If the bladder wall is thickened, the sensation through the abdominal wall is that of a soft body and a tumour may be suspected. In many cases the metallic sound will be useful in discriminating between calculus and tumour. It is not always easy, however, to hear any metallic click of the sound on stone through a thickened bladder. Further, in the small male dog the sound must be so fine and in consequence so pliable that one fails to get the effect of a stiff metallic probe striking the calculus.

Röntgen rays will finally decide if any doubt remains. The additional advantage of the X-ray is that any other calculus either in kidney or ureter will be revealed.

Operation.—The patient is secured in the dorsal position and chloroformed. The skin of the abdomen is dry shaved and painted with tincture of iodine. An incision is made through skin and fascia in the median line in the bitch or to one side of the penis in the dog. Local hæmorrhage having been arrested by means of artery forceps, the peritoneum is pierced by the point of scalpel and director inserted. The opening is increased to the extent of about two inches. The bladder is then picked up by the index finger, brought up through the incision and packed round by sterile gauze. The bladder is then held between thumb and finger and a small incision made,

taking care to avoid the network of vessels distributed over the fundus. The calculus is gently squeezed out and the bladder washed out once with a sterile solution of boracic acid. The incision is then closed by a single layer of Lembert sutures, using a fine milliner's sewing needle and ordinary sewing silk which has been boiled. In some cases where the bladder wall is very thickened and friable, it may be deemed necessary to insert a second row of sutures. The bladder is then returned. The muscular wound is closed by interrupted silk sutures and the skin is united by silk worm gut sutures. No bandage is necessary.

After Treatment.—The operation wound is painted daily with tincture of iodine. Beyond this the less interference the better. No food is allowed for 12 to 24 hours, after which milk, barley water, Benger's, Brand's, etc., for three days. After the third day a little solid may be allowed. A little and often should be the rule for at least a week or ten days. It may be a wise precaution to give an urinary antiseptic such as urotropin in milk or drinking water subsequent to the operation. I have an open mind as regards the action or efficacy of these drugs. I am inclined to believe that they do not influence the result of a good, clean operation.

The skin sutures will begin to slough out from the fifth to the eighth day, or if healing is uninterrupted they will become loose and may be removed.

Buried sutures from the abdominal wall may appear with local points of suppuration from time to time and are easily removed. Catgut sutures will obviate this buried suture trouble but they are not absolutely safe, and safety is to be preferred in spite of slight minor inconvenience.

Urethral Calculi.

The male urethra is the commonest seat of obstruction by calculi. These gain the urethral canal from the bladder and are arrested either in the bony channel of the os penis or at any point posterior to this, including the perineal and ischial portions of the urethra. The commonest point is just behind the os penis. The urethra is very narrow and has little power of expansion where it traverses the bony canal, and in consequence sediment passing from the bladder becomes easily lodged. In some instances only one calculus may be present, varying in size up to that of a pea. On the other hand one may find a veritable nest of tiny calculi, or again these may be strung out at intervals along the urethra. I have removed as many as 63 distinct stones.

In the female urethra it is a more rare occurrence for calculi to lodge. It is, however, no uncommon happening, when calculi are present in the bladder of the female, for one to become detached and lodge in the urethra, with consequent acute symptoms of obstruction. The skiagraph already referred to as that of a Skye terrier showing no symptoms for years, skin was graphed on account of acute symptoms of urinary suppression. One calculus had become lodged in the urethral opening. A speculum was introduced into the vagina, and the passage illuminated by an electric torch held by an assistant. The calculus was just visible, and was carefully seized with fine forceps and withdrawn. No further symptoms occurred during life.

Symptoms.—The first sign of anything wrong is that the dog takes an unusually long time to urinate. This becomes progressively slower until finally the urine is passed a few drops only at a time. The urine is dark-coloured and sometimes streaked with blood. Up to the point when obstruction is complete the dog does not display any symptom of pain. For this reason the average owner will take little notice, and often delays to seek advice until the dog is in actual distress. From this point the animal becomes restless and uneasy. He will stand motionless with leg raised attempting to pass urine—or in other cases he may adopt the attitude of the bitch. There is a pinched, anxious look about the face, and appetite is in abeyance. If relief is not forthcoming within three days, symptoms of uræmia set in.

Diagnosis.—On palpation the distended bladder may be felt through the abdominal wall.

A catheter or a flexible metal sound (or even a fine metal probe) affords an excellent means of diagnosis, and may be passed either in the standing position, or with the dog secured in the dorsal position. The penis is exposed by drawing back the prepuce with the left hand and the catheter or sound is carefully introduced into the urethra by the right hand.

When an obstruction is present the passage of the catheter will definitely localise it. An irregular shaped calculus such as No. 14 may allow a fine catheter to pass, giving a sensation of grating.

Operation.—As a general rule it is not possible to prepare the patient, owing to the immediate need for relief.

The choice of an anæsthetic will depend upon circumstances. Chloroform is the best when circumstances allow, but failing skilled assistance, and in the case of subject suffering from age, cardiac or respiratory trouble, it may be advisable to use morphine, combined with a local anæsthetic such as eucaine. Morphine sulphate (gr. 1 to average terrier size) combined with atropin sulphate (gr. $\frac{1}{100}$) is administered hypodermically half-an-hour before operating.

The patient is secured on the table in the dorsal position, and all hair shaved from the surrounding parts, which are then painted with tincture of iodine. The local anæsthetic (eucaine) is then injected with a fine needle into the sheath on each side of the penis. The site of incision must be avoided, as healing appears to be retarded otherwise.

The penis is grasped by the first finger and thumb of the left hand about one inch from the scrotum. It is lifted upwards so that the skin of the sheath is stretched tight and the os penis is held in a central position. A clean cut is made through the sheath down on to the urethra, just posterior to the penial bone. If the incision is made too far back towards the scrotum

a small vessel may be severed, which results in the inconvenience of hæmorrhage.

In some cases the scalpel will cut directly on to a calculus. If so, it and any others within reach are removed with fine forceps. At this point, if the obstruction is entirely at and anterior to the incision the pent-up urine will escape in a stream through the operation wound.

The catheter is then passed. It may still fail to reach the operation wound, in which case calculi still remain. It may be possible by gentle manipulation of the catheter or a probe to push these back to within reach of the forceps. Failing this the incision must be extended forward. Having cleared the urethra in front of the operation wound, attention must be turned to the posterior portion. If the catheter can be passed right into the bladder the passage may be considered to be clear. It may happen, however, that an obstruction is again encountered in the perineal region. In this case the catheter is pushed as far as possible and an incision made down on it and the calculus. In cases of multiple calculi it may be necessary to open the urethra at several points and so long as precautions are taken against sepsis no ill-effects need be feared.

The wounds are cleaned with any weak antiseptic but they must not be sutured. In several of the cases where the vessel mentioned above has been severed, hæmorrhage was so troublesome as to necessitate the retention of a suture for twenty-four hours.

After-treatment.—The wounds are dressed daily with a non-irritating antiseptic, and the patient is kept on light food for a few days. A liberal allowance of milk and barley water, urotropin (gr. v.), or salol (gr. v.), twice daily in milk or water is beneficial.

For three or four days urine will be passed through the artificial opening, but in about five or six days this has healed, and the urine is passing through its normal channel.

In some cases the dog may be found at any time within three days of the operation making unsuccessful efforts to micturate. This is due to obstruction by blood clot, which is easily removed by passage of the catheter. In some cases the urine will be tinged with blood for about a fortnight. This is immmaterial.

Recurrence.—This is a condition where recurrence is to be expected. If the subject still maintains an urolithic habit, the peculiar conformation of the urethra with its bony canal is always liable to arrest any sediment. Some cases recur time after time.

It is strange that stricture is so rare as a sequel to this operation on the dog. The urethra is often unavoidably injured in evacuating all the concretions. The comparatively short life of the dog may not permit of time for the development of pronounced stricture. Stricture does occur, however, very occasionally, and in one case an exostosis of the os penis was noted.

In conclusion, it would appear that :—

(1) Urolithiasis is common in the dog and bitch, and will remain common under conditions of domestication.

(2) The train of symptoms produced by calculi in any part of the urinary tract is sufficiently definite as to render diagnosis possible and even certain when assisted by such modern methods as radiography.

(3) With present day methods of veterinary surgery a favourable prognosis may be given in a high percentage of cases treated by surgical means.

Discussion.

Mr. Dunlop Martin congratulated Mr. Stainton on a very interesting paper, and said he should like to ask him if in the case of a cat, when he had found that the animal had been having a lot of meat, he had changed its diet to one of fish and whether that had had a beneficial effect.

Professor Wooldridge said he would like to offer his thanks to Mr. Stainton for his very excellent paper, which must have taken an enormous time to compile. The essayist had laid an immense amount of material before them, and he thought that the thing that had interested him more than anything else had done had been two skiagraphs in particular, which he passed round—the one showing the calculus in the bladder and the other the pebble in the intestines. If these were laid side by side it was almost impossible, if not absolutely impossible, to differentiate between them. With regard to diagnosis, he was very pleased to hear Mr. Stainton refer to the difficulty in the use of the sound and of getting precise information when the instrument had passed into the bladder, because people often mentioned that as an absolutely positive means of diagnosis. He had had a number of instances where he could get no information. There were many things which served to show that one should not be too dogmatic, as one might have to explain to one's client that one had not found something that one felt sure existed. In regard to urinary anæsthetics, he was not enamoured of atropin, because there was a tendency on the part of atropin and belladonna to increase hæmorrhage; it undoubtedly dilated the white muscle of the smaller vessel as well as the larger. He preferred to use tincture of buchu in hæmaturia. As a urinary antiseptic he recommended hexamin and sodium salicylate.

Captain Kirk said he should like to join with the previous speaker in thanking Mr. Stainton for his excellent paper, and should like to ask him how long he thought it would take after an operation on the urethra for stricture to take place. "Owing to the comparatively short age of dogs they did not have time to show a stricture after an operation," but he would like to know if six years would be sufficient time for a stricture to occur ?

Professor Hobday said that this disease was very common in canine patients, in fact it was astonishing how common it was in both dogs and bitches, and it was therefore very necessary that they should make themselves *au fait* on account of its frequency. Furthermore, it was a disease in which they could make brilliant successes and cures. After the operation for the removal of the

ovaries and uterus this was the second most successful abdominal operation that anybody who wished to achieve surgical success in our profession could perform, and the removal of calculi from the bladder was an operation which one could undertake with almost a certain assurance that the animal could be returned to its owner cured. The formation of the calculi was a question of time, and the time that they took to re-form after the bladder had been cleared by operation had been of exceeding interest for some years to Mr. Stainton and himself. They had had one case in which a puppy at four months had already got a calculus in the urethra. He did not think there was anything on record much earlier than that. The huge calculi which had been passed round was taken from a spaniel eleven months old, and its size in that age of animal astonished them when it was taken away. He had received a large number of specimens from practitioners in response to an appeal issued through the columns of the *Veterinary Record*, and now, through the kindness of Professor Gardiner (Professor of Bio-Chemistry of the University of London), several hundreds of these calculi had been analysed; all those from the dog had been composed of triple phosphate. In the dog calculus in the kidney was always a serious matter, and not an operation that could be done with such prospects of success as in the human subject. The question of the time in which calculi would form again had been repeatedly brought to his mind. On one occasion 25 calculi were removed from a bitch's bladder and that same animal in nine months time needed another operation, and a large number of calculi were present again in a short period of time. As a rule, one could safely tell the owner that owing to the comparatively short life of the dog the prospect of recurrence was not very great, but one could never say with absolute certainty, even with a bitch of seven, eight, or nine years old, that the disease would not recur. However, the operation was generally worth doing, and one could obtain a successful result if one only followed the ordinary rules of antiseptic surgery.

The PRESIDENT concluded the debate by congratulating Mr. Stainton on the excellence of his paper and the wonderful exhibitions of specimens and photographs. The youngest patient he had treated for urethral calculus was a cocker spaniel puppy 11 weeks old, and he described the operation he performed. He had never had ill results from the use of atropin, and he generally used it with morphine when he was using the latter drug previous to chloroform. Urotropine he had found of great value, and he also used lithium citrate which Mr. Stainton had omitted to mention. He believed that lithium was of distinct use in preventing a recurrence of the trouble. He thanked Mr. Stainton for his paper and would now call upon him to reply.

THE REPLY.

Mr. STAINTON thanked the Fellows for the way in which they had received his paper. He did not think he had done much good by varying the diet of his patients. In regard to atropin, he had perhaps not made himself clear on that subject. He had given a very small dose combined with morphia, and he certainly thought that in a great many cases where cardiac or respiratory trouble existed atropin had an advantage, but on the other hand there were cases where atropin had a bad effect, and as a matter of fact he had intended to delete that reference from his paper. In regard to Captain Kirk's question regarding stricture, he was thinking more of the human stricture which occurred as a rule in the case of old men, and he had not thought of the particular age to which a dog would have to live to get stricture after operation, but he did not think twelve years would be sufficient. He had only seen stricture twice in a dog, and then the patient had been operated on more than once. He had never had a fistula case, and he hoped that he never would, because he should not like to have to treat it. With regard to the cat, he agreed that early diagnosis was not always easy either from the behaviour of the subject or from the history given by the owner, who, more often than not, would tell them that the cat was very constipated. Palpation, however, generally revealed a greatly distended bladder, due to obstruction of the urethra by sabulous material. If this could not be pressed out by massage of the penis he found the most successful method was to insert a Gray's cat catheter attached to a Higginson syringe by which a sudden stream of boiled water was forced into the urethra. He was a little bit sceptical with regard to drugs. He thought if they operated and removed the cause they had got the crux of the whole thing, and if they took half-a-dozen operations and in three of them subsequently used an internal antiseptic, and in three others used nothing, the results would be exactly the same if the subjects were good and the operations good.

Rabies and Smuggling.

"It is serious news to all dog-lovers, and for the matter of that to all dogs, that rabies has once more broken out in England," says the *Daily Mail*. "Southampton is the infected area, and, being a port, it seems probable that the outbreak is due to smuggling. We hope that the authorities will treat very severely anybody found smuggling a dog. Perfectly simple rules have been laid down for bringing dogs into the country, and it is intolerable that people should try to evade them and so cause endless suffering, trouble, and expense.

Rabies is purely a contagious disease, and thus it can be kept out altogether; or, once admitted, is liable to overrun the land. There is no excuse for ignorance in the matter. We have paid too dearly in the past for the stupid selfishness of the few. The time has come to deal most drastically with offenders against the law of quarantine. They are a public nuisance and a public danger."

BULLOCKS AS COIN COLLECTORS.

Mr. Hann, an Eastchurch, Kent, butcher, continues to find old coins in the stomachs of bullocks slaughtered after grazing on the Sheppey Marshes. They are all ancient coins, and among those obtained from different animals during the past few days are a small coin dated 1795, bearing the name of Victor Amed of Sardinia, a Charles II. farthing dated 1674, a George III. halfpenny dated 1806, and a Hamburgh shilling dated 1727.

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R.C.V.S.
ELECTION OF COUNCIL.

In the course of a few days voting papers will be issued to all graduates in the British Isles for the purpose of electing eight members of Council. Of late years it has usually happened that at about the time of election one matter more than another has agitated the professional mind, and as a result has been seized upon by some or all of the candidates in their election address. It is worthy of note that on this occasion there is an absence of any particular *mot d'ordre*, and candidates confine themselves for the most part to a promise to secure the interests of the general practitioner. From this it might be inferred that such interests had received but little care or attention at the hands of the Council in the past, and that a reorganisation of this body is necessary in order to remedy the injustice. Such is not the case. A careful scrutiny of the present constitution of our governing body will reveal the fact that the majority of the members are, or have been, general practitioners, while those who do not fall into these categories are men who, by virtue of the appointments which they hold, must be intensely interested in the welfare of the general practitioner. To those who have taken the trouble to read the reports of quarterly meetings, it must be abundantly evident that the vast majority of the work of the Council has to do with matters of interest, and often of very great moment to the general practitioner. Any genuine shortcomings can readily be remedied, and such remedy rests entirely in the hands of the profession. It is at least worthy of note and must be taken as a sign of the indifference of the general practitioner to the constitution of the governing body that usually less than one-sixth of our graduates trouble to fill up their voting papers.

We sincerely hope that there may be a very material increase in the number of votes recorded in connection with the forthcoming election, as evidence of some interest in professional government, and at least as some encouragement to those who serve their fellow men so loyally and so willingly.

Abstracts and Reviews.

Scientific Periodicals.

The Conjoint Board of Scientific Studies (under the Chairmanship of Professor C. S. Sherrington, Sc.D., F.R.S.) has undertaken the preparation and issue of a world list of periodical publications which contain the results of original scientific research.

The list will be an octavo volume containing, in alphabetical order, the titles and places of publication of all such periodicals in existence on January 1st, 1900, and of all issued after that date.

Libraries in London, Oxford, Cambridge, Edinburgh, Dublin and Aberystwith which take in these periodicals, will be indicated in the list, and, wherever possible, at least one Library in the United Kingdom will be indicated for each title.

The objects of the proposed volume are :—

(1) To supply as nearly as possible a complete list of current scientific periodicals.
(2) To indicate, where possible, at least one Library where each periodical is taken.
(3) To form a basis for co-operation between Libraries, so that the number of duplicates and the list of periodicals not taken in may be reduced.

We are informed that the name of the Library of the Royal College of Veterinary Surgeons will be indicated in the list for certain special periodicals dealing with Veterinary Science.

Tissue Culture.

The success of Dr. A. H. Ebeling in maintaining in culture for a period of eight years a piece of connective tissue isolated from the heart of a chick embryo was the subject of comment in *The Lancet*[1]. There are now published on the same subject the researches of Professor Otto Busse, whose recent death has been a blow to the faculty of pathology at Zurich. Professor Busse has demonstrated[2] the power of growth of animal tissue on a sterile medium of blood plasma, using pieces of rabbit's heart or aorta. After an incubation period of one, two, or three days fine threads and spicules are seen growing out from the edges of the tissue. These threads and spicules soon develop into a dense network of spindle and stellate cells, which rapidly increase in number, until a fine halo can macroscopically be seen surrounding the tissue. Such cultures can be kept for months and even years provided the medium is periodically changed. If the culture becomes infected with bacteria in the early stages of its growth, the surrounding layer is found to contain only round cells ; but at a later stage, when round cells are found mixed with spindle and stellate, or still later, when the network is well developed, the whole layer undergoes dissolution and is replaced by round cells only. Similar changes can be observed after chemical alteration in the plasma culture medium, as, for example, after injection of turpentine water into the animal some

[1] *The Lancet*, 1920, i., 335.
[2] Sitzung der Gesellschaft der Aerzte in Zurich, Jan. 12th, 1922.

hours before the serum for the medium is withdrawn. That the round cells are a specific reaction against a foreign irritating substance can be well demonstrated by allowing bacteria access to one side only of the piece of tissue. On this side the round cells are developed, while on the other side the usual apindle and stellate cells remain. Further, if a colony of bacteria is grown at a little distance from the tissue, the round cells are seen to stretch out in broad streams towards the colony and finally to collect in and around it, demonstrating the presence of chemiotaxis. Whence come these cells, and what is their nature ? This is what Professor Busse sets out to answer.

One theory is that they were cells which had accidentally wandered into the tissue from the blood and were nothing more than migrating leucocytes. This theory may possibly be held when the round cells are visible in fresh cultures, but it is more difficult to support when they are first seen in cultures that are already 5-10 days old and in which the spindle and stellate cells are well developed ; and it is completely untenable when the round cells are found in a pure spindle and stellate cell culture, as in the following experiment. The central piece of tissue can be removed with forceps from its halo of newly formed spindle and stellate cells, and these cells will go on reproducing themselves for weeks and months so long as the culture is maintained in its sterile condition. But as soon as contamination is allowed, round cells appear in the network, and their daily increase can be accurately noted. The number of round cells increases at the expense of the highly-developed spindle and stellate cells, which draw in their processes and degenerate into round cells, while at the same time the fibrinous meshwork of the culture medium undergoes solution and the whole culture becomes fluid, simulating the process that takes place in the body when pus is formed. From these observations there can be no doubt that the round cells come from the descendants of the tissue cells themselves and not from any hypothetical leucocytes. What is, then, the nature of these cells ? They resemble in many respects leucocytes, for one finds among them cells with U-and-S-shaped nuclei. Some of them show granulation in their protoplasm, which is more often eosinophile than basophile, and round cells have been found that in every morphological character resemble neutrophile leucocytes. For some time the objection was raised that in spite of their morphological resemblance these cells were not true leucocytes, for they failed to give the oxydase reaction, but recently Professor Busse has come to the conclusion that it is not surprising that the chemical conditions in a small drop of plasma are not the same as those present in the circulating blood in men and animals, for many of the chemical auxiliaries of the body must necessarily be missing. Possibly through improvement in the culture medium it may be possible to produce those conditions in which an oxydase reaction will be positive.

Professor Busse points out, further, that it is by no means true that tissue will only grow on plasma from the same animal. Embryonic tissue especially is easy to cultivate in a foreign plasma—*e.g.*, tissue from a young chicken was grown on dog's plasma, and true mitosis was observed. Cultures of human connective tissue and of various tumours have been grown with success on animal plasma, but great difficulty has been experienced in using human plasma, because, even in the absence of infection, human plasma tends to liquefy and the firm medium which is necessary for accurate observation of tissue cultures is not obtained.—*The Lancet*, April 29th.

Clinical and Case Reports.

The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases

Equisetum Poisoning in the Horse.

By Geo. Dods Munro, Department of Hygiene, Royal (Dick) Veterinary College, Edinburgh.

From the study of the literature it would appear that poisoning as a result of eating horsetails (*Equisetum sp.*) is quite common in other parts of the world, and though but few instances have been recorded of stock being poisoned in this country, such occurrences are probably not infrequent, as *Equisetum arvense* and *Equisetum palustre* are very common weeds.

The various species of *Equisetum* are commonly known as horsetails, and, unfortunately, some confusion is caused by their being often described as mare's tail.

Mare's tail is a different plant altogether (*Hippuris sp.*), which has no botanical relationship to *Equisetum*, and which is not toxic.

Considerable difference of opinion has been expressed as to toxicity of these non-flowering plants, the *Equisetaceæ*, but at the present time it seems certain that some of them, at least, are definitely injurious to farm stock. All observers seem to agree that the green plant is less injurious than the dried plant, as it appears in hay, but the explanation of this might well be that grazing animals can to a certain extent avoid the growing plant, but when it forms a considerable portion of their hay they cannot very well do so. It has been frequently observed, however, that small quantities of this weed when present in hay are carefully avoided by horses.

In this country *Equisetum, arvense* and *Equisetum palustre* should be regarded as dangerous, and of the two, *arvense* probably does the greater harm, being more commonly found in hay.

As to nature of the toxic substance, it has been suggested from time to time that the silica, with which these plants abound, is the sole detrimental material. Aconitic acid has also been held responsible, but it is probable that the toxicity of the plant is due to the alkaloid *Equisetine* which has been recovered from *Equisetum palustre* by Lohmann. It seems more than doubtful if silica, harmful though it may be, could possibly produce the symptoms that follow prolonged feeding on these plants.

Reviewing the recorded cases, Long (1) gives the following general symptoms of *Equisetum* poisoning. At first, he says, there is excitement and anxiety, followed by uncertainty of movement, with reeling and staggering ; paralysis of the hind limbs, with

falling and possibly general paralysis, insensibility to external irritants, unconsciousness and coma; the pulse is accelerated, the appetite is at first normal, but in course of time there is a great disturbance of nutrition, and there may be sugar in the urine. It is stated that the course is sometimes very acute, death occurring in a few hours, but sometimes protracted and even chronic. In cattle, according to Long, after excessive feeding, continuous diarrhœa is characteristic, and also paralysis. Colic, constipation, bloody urination, abortion, and loss of teeth have also been recorded. It is said that young animals succumb sooner than older ones, and that grain-fed animals are more resistant than others. In horses, paralysis of the hind limbs with swaying and staggering appear to be constant symptoms, with, in chronic cases, wastage of the muscles and general emaciation.

Equisetum appears to be very common in Russia, and the symptoms recorded from that country (2) are, in horses, unsteady gait, trembling, falling, convulsions and death from spinal-cephalic paralysis. In cattle it is said that the first symptoms are diarrhœa and bloody urination; in pregnant animals abortion, weakness accompanied by loss of condition; diminution of milk, and loss of teeth and hair. The plant is said to be more injurious dried (in hay) than green. F. Chambers, when on military duty in Russia, also noted the frequency of *Equisetum* poisoning, and has stated that the weed is found in most of the local hay. Laminitis was often present and sometimes chronic. He found it to cause partial posterior paralysis, with a pronounced swaying movement and uncertain gait when the animal was made to walk. Chambers found the temperature to be raised, the pulse and respiration to be accelerated, and the animal to be very excitable (3).

A record of the poisoning by *Equisetum arvense* was made by W. R. Davis at Enfield in 1919 (4). He says that the affected animal reels and staggers like a drunken man, and if the recumbent position is assumed there is a disinclination or inability to rise for a time. When the animal gets up it may walk in an extraordinary manner, flexing all the limbs violently so that its progression is most grotesque. The forelimbs are picked up with an exaggerated hackney-like action, and the hind limbs are moved as if the subject had very bad stringhalt. He found that at times the slightest sound would make the patient start as if in terror.

The occurrence of *Equisetum* poisoning is also recorded from Oregon, W. E. Lawrence (5) having found *Equisetum arvense* to produce symptoms similar to bracken poisoning.

The writer met with two cases of this trouble during April of this year. The subjects were (*a*) a chestnut gelding, aged 7 years, and (*b*) a dark brown gelding, aged 10 years. Both horses were of the heavy van type, and were used for vanning work and on the land. Case "*a*" was brought for examination on April 1st, and the vanman said the horse was off its food and shaking its head a good deal. The animal was thin and debilitated. The head was examined to see if there were any wounds about the head or diseases in the ear, but nothing was found to account for the animal's action. The man was told to give his animal bran mashes during the week-end and to keep him in, so that he could be treated if necessary. The subject was visited on April 3rd, when the pulse was found to be sub-normal and feeble, with a lack of resilience in the arterial walls. The heart beat was faint and irregular, and the temperature slightly subnormal. The shaking of the head was more manifest outside than when the animal was standing in the stall. A purgative was given and the owner instructed to give the horse slight walking exercise only. It was observed that the hay contained an excessive quantity of horsetail (*Equisetum arvense*), and Professor R. G. Linton was written to with a view to finding out if this plant would produce any of the symptoms observed.

The horse was visited again on April 6th, when all the symptoms observed previously were still present. The horse was put into double harness, when he made a great "show," but would not put any weight in the collar, and he walked "wide" behind. (The horse in his normal state was a very anxious animal, so little importance was attached to this "show.") Instructions were given to rest the horse until he was examined again on the 10th, to stop feeding with the bad hay, and to substitute hay from a meadow which was known not to contain the weed. The owner at this time called attention to the second horse, which up to the present had shown no untoward symptoms, and as a prophylactic measure instructions were given to stop feeding with the bad hay. The urine of both horses was cloudy, and tested with Fehling's solutions for sugar gave practically negative results.

A further visit was made on April 10th, when examination of case "*a*" showed the pulse to be stronger and practically normal, the temperature was normal, the shaking of the head practically stopped, and the animal's gait was normal. Accordingly, this animal was returned to work. Case "*b*" was also examined, and the driver stated that this animal had also started to shake his head, show a disinclination to work, walked with his head down, and seemed to take no interest in anything.

Both animals were again seen on April 15th, when information was received that case "*a*" would start off in the morning all excitement, work for about half-an-hour, and then sit on his haunches and remain so for about ten minutes, and then repeat the performance. Case "*b*" would start off sluggish in the morning, and in a short time stop, and no amount of coaxing would induce him to go for about quarter of an hour, when he would also repeat the performance. These peculiar actions had been most frequent on the 11th, but had decreased daily, and on the 15th they were working much better, but by no means so well as they did before receiving the bad hay.

It will be noticed that the younger horse was the more affected, and with the exception of the shaking of the head, the symptoms exhibited by both horses were not identical. Both animals recovered.

These two cases have been especially instructive to the writer, as showing the necessity of a careful examination of the diet when the diagnosis is not clear.

REFERENCES.

(1) *Plants Poisonous to Live Stock.* H. C. Long, Cambridge University Press, 1917, p. 84.
(2) *Trudy Bjuro po prikladnoj Botanikje.* January, 1916, through *Journal, Board of Agriculture and Fisheries,* June, 1916.
(3) *Veterinary Record,* Vol. XXXII., No. 1627. 13th September, 1919.
(4) *Veterinary Record.* Vol. XXXII., No. 1631. 11th October, 1919, p. 155.
(5) *The Principal Stock-Poisoning Plants of Oregon.* W. E. Lawrence, Oregon, Agricultural College Experiment Station Bulletin, 187, January, 1922.

Obiter Dicta.

By W. R. DAVIS, M.R.C.V.S., Enfield.

The meagre results obtained from the appeal for clinical notes—perhaps the most interesting matter contained in *our Record*—has set me wondering whether practitioners could not be induced to contribute to a column or two, set aside for the purpose, fragmentary remarks on cases or methods of practice, or even about things in general connected with our profession—thoughts that occur or recollections that come to them on their daily rounds. This would not require the effort needed to set about writing up cases, but could be dashed off on half a sheet of note paper and despatched while still fresh in the mind. I make a start.

At a recent meeting of the Central Veterinary Society methods of destroying horses were discussed. No mention was made of an intravenous injection of Scheele's prussic acid. A 10 c.c. Record syringe holds, when filled, about half an ounce, and with this dose I have repeatedly killed horses.

The animal falls and is dead in a few seconds, and, curiously enough, presents when dying the symptoms of tetanus, opisthotonos and protrusion of the membrane nictitans being most marked.

I do not recollect having read of the use of a twitch in cases of difficult parturition in the cow and mare, yet it is an extremely useful tool when the difficulty is due to displacement of the head. Last week I attended a heifer which had been trying to calve for six hours. Two fore feet were at the vulva, but the head could not be found by the owner, who is fairly expert at calving. I ascertained that the calf was coming on its left side (right dorso-ilial position) and the head, doubled round with the jaw looking towards the maternal sacrum, was lying below the pelvic brim. There was not much room, and after failing to cord the jaw (the calf was alive and was by a pedigree shorthorn bull, so that I did not care to use a hook), I made a twitch with a porte cord and was easily able to fix the loop on the lower jaw. The rod was now twisted by an assistant, and while I pushed the fœtus into the uterus he soon had the head in the pelvis, and delivery of a live calf was effected.

In cases of wooden tongue I find the application of phenol iodin greatly helps the K.I. treatment, and I believe that it was recommended by Principal Whalley. Acid carbolic crystals are liquefied by the addition of 10 per cent. of water, and to 4 of this 1 of iodin is added and digested till dissolved. It can be applied to the raw surfaces with a glass rod.

I was at a farm recently, and the owner, who was putting up a new byre for a double row of cows, asked me to advise him a little about the arrangements. I suggested a standing 5ft. 7in. from the trough, a step down of six inches to the floor, which should have a very gentle slope to a shallow gutter in the middle of the passage (there was to be no "grip").

A pedigree red poll cow, due to calve in June next, and still giving a couple of gallons of milk a day, was turned out to grass on Wednesday morning, April 12th. She had given a gallon of milk and had cleared up her food. A few hours afterwards she was found dead in the field.

On post mortem I found a large abscess occupying the apex and part of the left ventricular wall of the heart. The pus, of which there was nearly a pint, was like very thick cream, and resembled closely the contents of "wens," so commonly met with in cattle. I treated this cow for a large wen on the flank six months ago, and I am of opinion that this abscess was due to the same cause. The cow had been tested for tuberculosis before purchase. It seems extraordinary that such a lesion could exist and be tolerated so as to give rise to no signs of circulatory or other disturbance. The liver was normal; there was no ascites and no œdema.

Association Reports.

National Veterinary Medical Association.

QUARTERLY MEETING OF COUNCIL.

(Continued).

FINANCIAL STATEMENT.

The TREASURER said that arising out of some statements made by the Secretary there was the fact that only a comparatively small number of members had paid their subscription, and the amount standing to the credit of the Association was nothing like what it should be if subscriptions had been paid. At the present time there was about £703 standing to the credit of the Association, and from that he had been instructed to pay out ten guineas to the Victoria Benevolent Fund and £15 to Mr. Gostling. There was the lawyer's account which had not yet been paid. He would like permission to pay this account, as it is very much overdue, and he thought it would be advisable to get rid of this debt. There was also the printng bill for last month, which had not yet been received, but he estimated this would be about £180.

He also called attention to the increasing expenses for overhead charges in connection with the office. During the first three months of the year these expenses were always higher on account of postages for subscriptions, circularising, etc., and instead of the usual £50 lasting for three weeks, it had only lasted a fortnight. He was pleased to say, however, that the prospects were quite good, but he thought something should be done to speed up the members who had not yet paid their subscriptions.

The Treasurer was instructed to pay the lawyer's account.

It was resolved that a vote of thanks be conveyed to Mr. De Vine for the valuable help which he and his staff had afforded the Association in conducting the advertisement department.

SUGGESTIONS *re* DEVELOPMENT OF BRANCHES.

The SECRETARY said that no doubt they were aware it was considered advisable that branches should be developed in that they should be made to take a greater interest in the work of the Association and should become actual working bodies. He had, therefore, drafted rough suggestions, which he did not claim to be the finished article, but merely a basis for discussion. He had sent a copy to the President for his opinion, and he had agreed that no harm could be done by bringing the matter before the committee.

It was resolved that the branch executives be requested to call a meeting of the Presidents, Secretaries, and Treasurers of the divisions in the respective areas, and to confer regarding the feasibility of the proposed development.

Sir LAYTON BLENKINSOP seconded the motion, which was carried unanimously.

REPORT OF SALARIES COMMITTEE.

Professor WOOLDRIDGE read the following report of the meeting of the Salaries Committee, held in Edinburgh on February 7th, and moved its reception and adoption :—

A meeting of the Salaries Committee was held at the Royal (Dick) Veterinary College, Edinburgh, on Tuesday, February 7th, 1922.

There were present: The President, Prof. Linton, Mr. Gofton, Mr. W. Brown, and the General Secretary. Apologies for absence were received from Prof. Wooldridge, Messrs. J. Clarkson, Brennan De Vine, and J. Abson.

Dr. Bradley was elected chairman.

The GENERAL SECRETARY presented a revised list of the salaries paid by twenty-one of the more important authorities to their whole-time veterinary inspectors. After careful consideration of these and other salaries, it was finally decided to recommend the following minimum scale of remuneration :—

Junior Assistant Inspectors :

(*a*) Without D.V.S.M. or equivalent post graduate degree, £250; increasing by annual increments of £25 to £350.

(*b*) With D.V.S.M. or equivalent post graduate degree, £300; increasing by annual increments of £25 to £400.

Senior Assistant Inspectors :

£400, increasing by annual increments of £25 to £500.

Chief Veterinary Inspectors :

According to the responsibility of the appointment: minimum, £500 per annum.

It was further decided to recommend to the Council that the General Secretary be authorised not to accept advertsements for whole-time appointments of veterinary inspectors which do not conform to this scale.

After consultation with the President and the Chairman (Professor Wooldridge), the Secretary announced the approved scale for several weeks in the journal of the Association.

Mr. J. WILLETT seconded the motion, which was carried unanimously.

Professor GOFTON: Before that is actually put to the meeting I should like to suggest that inquirers should be instructed not to accept appointments which do not conform to the scale. I would like instructions to be given to the General Secretary not to accept advertisements which offer salaries lower than those which have been recommended by the Committee.

The PRESIDENT: May I point out that the matter of colonial salaries will be raised at a later part of the agenda on the resolution expressed by the Mid-West and South Wales Division? We have it moved and seconded that this report be adopted.

Agreed.

The PRESIDENT: It is on the agenda that there will be a report from the special committee appointed to consider the methods of distribution of biological products, but as this Committee is only just considering its methods, we will pass on to the report from the Sub-Committee appointed to consider the advisability of joining the Federation of Medical and Allied Societies.

Major-General Sir LAYTON BLENKINSOP read the following report of the meeting of the Sub-Committee, and proposed its reception and adoption :—

FEDERATION OF MEDICAL AND ALLIED SOCIETIES.

A meeting of the sub-committee appointed to consider the advisability of joining the Federation of Medical and Allied Societies was held at the offices of the Association on Monday, March 6th, 1922. There were present Major-Gen. Sir J. Layton Blenkinsop, Major F. Hobday, Professor G. H. Wooldridge, Mr. J. W. McIntosh, Mr. G. P. Male, and the General Secretary. Apologies for absence were received from the President and Mr. W. Woods.

Major-General Sir J. Layton Blenkinsop was elected chairman.

Major HOBDAY submitted a draft of the new prospectus of the Federation and pointed out that :—

Subscription.—Corporate Members' Societies pay no annual subscriptions, but only such voluntary annual contributions, towards expenses, as they may be disposed and able to make.

Representation.—Corporate Members are such professional societies who apply and are elected to representation. Each has one representative on the appropriate professional council, and on the Executive Council and in general meeting is entitled to one representative for every 3,000 or part of 3,000 of its membership.

A letter was submitted by Major Hobday from the Federation stating that the Council of that body approved the admission of this Association, and approved also that it should have representation upon the Medical Council of the Federation.

It was decided that this Association accept the invitation to join the Federation of Medical and Allied Societies, and that Major F. T. G. Hobday be appointed its representative on the Medical Council.

The General Secretary was instructed to inform the Federation of the Committee's decision, and to forward the necessary form of application.

Mr. MCINTOSH seconded the motion, which was carried unanimously.

The SECRETARY: Since that date I have had a letter from the Secretary of the Federation as follows:

March 29th, 1922.

J. Basil Buxton, Esq., F.R.C.V.S.,
General Secretary,
The National Veterinary Medical Assoc.
of Gt. Britain and Ireland.

Dear Sir,—I have pleasure in notifying you that, at the meeting of my Executive Council yesterday, your Association was unanimously elected a corporate member of this Federation.

In due course I shall be glad to receive from you a cheque for whatever sum, if any, your Council sees fit to contribute towards our expenses.—Yours faithfully, (signed) N. HOWARD MUMMERY, General Secretary.

The PRESIDENT: It has been moved that the report be received and adopted.

Agreed.

Sir LAYTON BLENKINSOP: With regard to the amount of the subscription to be paid, formerly there was an affiliation fee, but that has now been dispensed with, and it is left to the Association joining to pay what it considers a suitable amount. I suggested that it should not exceed three guineas.

Mr. MALE: I understood Professor Hobday was going to see the Secretary and find out what sum he thought was necessary.

The PRESIDENT: This Council can make some suggestion.

Mr. J. WILLETT: I suggest a sum not exceeding five guineas.

Major SIMPSON: I second that.

Carried.

NATIONAL MILK CONFERENCE COMMITTEE.

Professor WOOLDRIDGE read the following report of a meeting of this Committee (convened by the National Clean Milk Society) at which he represented the Association:—

Minutes of a meeting held on March 16th, 1922, at 3 Bedford Square, W.C.1.

There were present Mr. Wilfred Buckley, National Clean Milk Society (in the Chair); Mr. A. D. Allen, National Farmers' Union; Colonel Barham, British Dairy Farmers' Association; Miss Hughesdon, Women Sanitary Inspectors' and Health Visitors' Association; Dr. S. G. Moore, National League for Health, Maternity and Child Welfare; Dr. Orr, Society of Medical Officers of Health; Mr. J. T. Quinton, Sanitary Inspectors' Association; Professor Wooldridge, National Veterinary Medical Association of Great Britain and Ireland.

The Secretary of the National Clean Milk Society was in attendance.

Mr. J. T. Horner, the representative of the National Federation of Dairymen's Associations, did not attend.

The list of Associations invited to send representatives to the meeting was read, together with the names of the representatives.

An apology for absence was read from Dr. Wheatley, the appointed representative of the Society of Medical Officers of Health, whose place was taken by Dr. Orr.

1. *The advisability of holding a Conference to discuss Milk in all its aspects.*

Mr. BUCKLEY explained that the Council of the National Clean Milk Society felt strongly that it would be to the national interest as well as to the interests of those concerned in the production and distribution of milk if a conference could be held in London, lasting if necessary for several days, at which milk in all its aspects could be thoroughly discussed, with a view to disseminating present knowledge. His suggestion was that a suitable length of time should be allotted to each aspect to be discussed, that an expert should be invited to read a paper on the subject, and one or two other experts be invited to speak before the subject was open to general discussion. Mr. Buckley stated that he had had an informal discussion regarding such a Conference with some officials of the Ministry of Health, and he had no reason to believe that the proposal would not meet with the approval of that Ministry.

The following resolution, moved by Mr. QUINTON and seconded by Dr. MOORE, was agreed to unanimously:—

"That it is desirable that a Conference be held, provided it is found workable."

2. *Should this Committee* (a) *carry on the work or* (b) *merely draw up suggestions as to how the Conference should be conducted.*

The latter course was decided upon as the representatives had not received power from their Associations to proceed further.

3. *That Societies or other Bodies should be invited to co-operate.*

It was agreed that in addition to the Associations already invited the following bodies should be asked to co-operate in organising a Conference to be called the "National Milk Conference":—

The Municipal Corporations' Association.
The County Councils' Association.
Central Chamber of Agriculture.
Royal Agricultural Society of England.
Royal Sanitary Institute.
The Cattle Breeds' Societies.

It was agreed that the Ministries of Education and of Agriculture should be approached with a view to what help they might be able to offer.

4. *Date and Place of Conference.*

Mr. BUCKLEY reported that the *Daily Express* were holding a "Woman's Exhibition" at Olympia, in July, at which the National Clean Milk Society were to organise a Milk Exhibit on behalf of the Ministry of Health, and that it might be possible that arrangements could be made for the use of a hall at Olympia during the period of the Exhibition. It was decided that it would be inadvisable to hold the Conference in connection with any newspaper, and that it would be best to try to obtain the use of the Guildhall, and failing that, of the Middlesex County Hall, or the hall of one of the City Livery Companies. Mr. Buckley undertook to ascertain what hall could be obtained. It was agreed that the Conference should be held, if possible, during the week of the annual show held at Islington by the British Dairy Farmers' Association.

5. *Finance.*

Dr. MOORE expressed the view that the proposed Conference would be self-supporting, and that a guarantee fund of £500 would probably be ample to cover all risks.

6. *Suggested subjects for discussion.*

The following were suggested as some suitable subjects for papers, to be followed by discussions:—

(1) *Production.*
- (*a*) Breed in relation to production of milk.
- (*b*) Feeding and economic production.
- (*c*) Methods of producing clean raw milk.
- (*d*) Tuberculin tests and tuberculosis.
- (*e*) Cattle diseases other than tuberculosis in relation to milk.
- (*f*) Chemical composition of milk.

(2) *Distribution.*
- (*g*) Handling and distribution of milk
  - (i) On the railway.
  - (ii) By wholesalers and retailers.
- (*h*) Treatment of milk (sterilisation, pasteurisation, etc.).

(3) *Public.*
- (*i*) Food value of milk.
- (*j*) Care of milk in the home.
- (*k*) Education and the dairy industry.

7. It was agreed that the Secretary of the National Clean Milk Society should continue to act as Secretary of the Committee, and should call a meeting as soon as possible of representatives of all the Associations who agree to co-operate, giving a fortnight's notice of such a meeting.

Continuing, Professor Wooldridge said, What we have to decide is whether this Association can or cannot profitably take a part in this proposed Conference. I think there is no doubt the Conference will go on, and as there are certain subjects likely to be discussed which are of vital importance to our profession, it seems highly desirable that we

should be represented. I do not think it right that such subjects as the tuberculin test should be discussed in the absence of some representative of this profession. It seems to me desirable that we should agree to co-operation.

The PRESIDENT: Before this discussion begins, I wish to crave your indulgence in order to catch a train. Have I your permission to ask Mr. Woods to take my place? Agreed.

Mr. W. Woods then took the chair.

Sir LAYTON BLENKINSOP: I would like to endorse what Professor Wooldridge has said with reference to sending a representative from this Association to the committee. It will probably be within the memory of those who were at the Royal Sanitary Congress at Folkestone that this question of clean milk cropped up, and it was then thought it was very necessary that someone from the veterinary profession should be present. As far as I understand, the National Clean Milk Society is only too anxious for our co-operation, and I think we should not be doing our duty to the public if we did not send a representative. I propose a representative be sent.

Mr. MALE: I should like to second that proposal. You all remember the great assistance General Blenkinsop was to the veterinary profession at the Sanitary Institute Conference.

Professor WOOLDRIDGE: I understand you are suggesting a representative on the committee in the first instance. Would it not be better to agree that we co-operate in the conference and then nominate a representative for the committee? I think you may have heard there was a suggestion of a guarantee for £500, which would be necessary from some source. I understand there will be little or no difficulty in getting that guarantee—we might be asked to give a guarantee for a certain amount, or it might not be asked for. I suggest £20. I do not think we ought to pay more towards expenses. I take it you mean that first of all we co-operate and that a representative be sent to the committee.

The CHAIRMAN: I think that would be better. Personally I am very much in favour of co-operation in a matter of this sort.

It was suggested that it should be put to the committee that we co-operate and send a representative to the organising committee.

Professor WOOLDRIDGE: I wonder if it would be possible to send two members? I should like the assistance of Sir Layton Blenkinsop.

Sir LAYTON BLENKINSOP: I live too far away and should not be able to attend the meetings. I suggest Mr. Male.

Professor WOOLDRIDGE: I feel that this organising committee will subsequently ask for representatives to attend the Conference; this is only for a representative on the committee, and General Blenkinsop would be much more likely to help us by attending the Conference than attending the meetings held frequently.

Mr. MCINTOSH seconded that Mr. Male be appointed the other representative.

The CHAIRMAN: Is it your wish that two members be appointed to attend these committees? The two members nominated are Professor Wooldridge and Mr. Male. Is it your wish they should be the representatives? Agreed.

Professor WOOLDRIDGE: I think the question of a guarantee should be discussed. If the thing fails, we might be called upon to pay the amount we have guaranteed. I believe there are several public-spirited men who have already offered to contribute towards the expenses of that Conference if it is held. In these circumstances, together with other means of income, I do not think it is likely we shall be called upon to pay the guarantee.

The CHAIRMAN: Would you like a resolution passed that, if necessary, we will pay up to £20?

General BLENKINSOP: I propose that we guarantee up to £20.

Mr. J. WILLETT: I second that. Agreed.

RESOLUTION FROM THE MID-WEST AND SOUTH WALES DIVISION.

The CHAIRMAN: The resolution is on the agenda. I do not know whether any of you have gone into it; if so, I should like to hear your opinion.

General BLENKINSOP: A similar resolution came before the Central Veterinary Society the last time. This resolution can be divided into two parts—the first part is, people going overseas and the other, people at home. I propose to speak with reference to those who are going overseas, down to the word "also." I have had considerable experience in different parts of the world, and I can say without any hesitation it would be the greatest advantage to young members of this profession if, before taking up appointments overseas they had accurate information regarding their status and the value of salaries in those countries. It has been said that a scientific worker can work for very little in overseas appointments. If they are going to take up their proper status, they must be able to live in the same way as other professional men in that country, and it is quite impossible for anyone who has not been in the colonies to say whether the salaries offered are adequate or not. I have been in discussions where the money value of these overseas appointments have been put into English money. This is of no value at all. What one wants to know is the cost of living and what will be expected from the man taking the appointment. I consider, if I may suggest, the best way to deal with this question is that a committee be appointed of certain people, representatives of different parts of the colonies, who will answer questions regarding these colonies. I do not consider it will do to get information and have it kept in pigeon-holes to be taken out as required. What is wanted is reliable information, and to get that you should have representatives who will take the necessary steps to keep this up to date with regard to the colonies or those overseas areas on which they have to advise. I think that nothing but good can come out of this, and I think it is a thing which the N.V.M.A. should take up.

The CHAIRMAN: You move that a committee be appointed?

Professor WOOLDRIDGE: In order to facilitate discussion, I beg to second this. Is this committee, which will meet at home, to be instructed to give certain information to people going overseas?

General BLENKINSOP: I suggest that a committee should be formed and that certain people should be told off for different areas. The people nominated for those areas should be placed in touch with those who wish to take up an appointment there.

The SECRETARY: It is quite obvious that an enormous amount of work will be entailed. It seems to be quite necessary in any case that we shall have to consider this again, and I would suggest that to-night we appoint a small committee to discuss ways and means of appointing people to undertake this work. It appears to me to be very difficult on the spur of the moment to suggest a representative committee. I think a committee should be formed, and at the latest this can be ready by the next quarterly meeting.

Major SIMPSON seconded the proposal made by the Secretary. He said it was impossible to push a thing like this through at once. It had better be carefully looked into with regard to ways and means, also a very careful selection should be made of the people who were to be asked to carry out the duties.

The CHAIRMAN: You really want a committee to be in touch with applicants.

Major SIMPSON: A small number of the present committee could be put on the Standing Committee, or those who would give the necessary information. A small committee would be enough at the present moment.

General BLENKINSOP: I think that would be the best thing.

The SECRETARY: The resolution is as follows:—"That a small committee be appointed to consider the best methods of carrying out the work which will be entailed by the appointment of the Standing Committee in question."

Major SIMPSON: I second that.

Mr. MALE: I should like to propose that General Blenkinsop, Professor Gaiger and Major Simpson be appointed.

Professor GAIGER: May I suggest that someone else be appointed on the small committee to offer advice? I am quite willing to do anything I can to make it my business to advise anyone going out to India, but I do not think it necessary to be on the committee. I would prefer that someone near at hand be asked to serve, unless the meetings are going to be held at the same time as the Council Meeting.

Professor WOOLDRIDGE: I beg to second those nominations, together with the President and the Secretary.

The CHAIRMAN: You have heard the resolution; those in favour of it say "aye." Carried.

RESOLUTION FROM THE WESTERN COUNTIES DIVISION.

"The members of the Western Counties Veterinary Medical Association are of the opinion that the time has arrived when a closer union between the Ministry of Health and the Veterinary Profession is desirable."

After a lengthy discussion, the Secretary was instructed to inform the Western Counties Division that the Council was in sympathy with the resolution, and that when an opportunity occurred, an endeavour would be made to effect a closer union in so far as that Association was able.

The CHAIRMAN: We have before us a request that this Association should appoint a delegate to attend the Second International Congress on Comparative Pathology to be held at Rome.

The SECRETARY: The request, together with a programme, was forwarded to this Association, and I hear to-night that Major Hobday has been appointed Secretary of the British Section. I have a letter from him in which he expresses the hope that this Council will appoint a delegate to attend the Conference. I mentioned it to the President, and while he agreed whole-heartedly with the idea of having a representative there, he was afraid it would be rather expensive. As a matter of fact, it would be impossible for any of us to attend for a sum of less than £30 or £40.

Professor GAIGER: Is there any chance of our delegate going in any case?

The SECRETARY: Major Hobday is going in any case, but the idea was that the profession in this country should send several representatives.

Mr. BEGG: You can gauge the expenses if you get to know who is going.

Professor WOOLDRIDGE: Might I suggest it is referred to the Finance and Advisory Committee?

Professor GAIGER: I agree to the suggestion that the matter be referred to the Finance and Advisory Committee.

THE CHAIRMAN: Is that your wish?

Agreed.

The SECRETARY announced that the next meeting of the Council will be held at Bath.

The Central Veterinary Society.

THE OVERSEAS APPOINTMENTS QUESTION.

A general meeting of the members of the Central Veterinary Society (National Veterinary Medical Association—Central Division) was held at 10 Red Lion Square, London, W.C.1, on Thursday, April 6th, at 6-30 p.m., Mr. G. H. Livesey, the President of the Society, in the chair.

The following Fellows signed the attendance book:—Maj.-Gen. Sir L. J. Blenkinsop, Messrs. J. Willett, A. E. Willett, H. D. Jones, E. L. Stroud, W. Perryman, W. N. Thompson, H. J. Parkin, O. S. Broadhurst, S. H. Slocock, A. L. Wilson, R. J. Foreman, F. H. Stainton, J. B. Buxton, A. Payne, J. C. Coleman, M. G. Byerley, H. R. Allen, J. McCunn, H. C. P. King, W. R. Davis, Lt.-Col. H. S. Mosley, Majors P. J. Simpson, P. Dayer-Smith, F. G. Hobday, G. Rees-Mogg, Professors G. H. Wooldridge and E. B. Reynolds, Messrs. J. Rowe, W. S. King, H. King and R. Bennett, Captains G. Dunlop-Martin

and H. Kirk, Messrs. B. S. Cockerton, J. Bell and J. F. Macdonald, *Hon. Sec.*

Visitor: Professor A. Gofton.

The minutes of the previous meeting were read and confirmed.

The HON. SECRETARY, Mr. J. F. Macdonald, read a letter from Mr. Chalmers, of Tunbridge Wells, tendering his resignation, and stating that he had not been able to attend the meetings of the Society, and saw no prospect of doing so in the future. He wished the members every success.

Professor Wooldridge moved that Mr. Chalmers should be invited to reconsider his decision, and come and give the Society his personal support.

The motion was put and carried unanimously.

Morbid Specimens. Members were invited to present morbid specimens, and a specimen was produced by Professor REYNOLDS of 32 calculi found in the bladder of a bitch about six years old, weighing 5lbs. The total weight of the calculi was 1oz. 5 drams. The bitch was not operated on when she was brought in, as she appeared to be almost *in extremis*. From the character of the discharge it was evident that the bladder was very badly infected. It was thought that by washing out the bladder with a disinfectant and by giving her urinary antiseptics internally there would be a greater chance for an operation to be successful. The bitch died, however, within 24 hours of being brought into the hospital.

Captain HAMILTON KIRK said he had a bone, showing rather an extensive ringbone, which was taken from a light vanner.

There was no discussion on the presentation of the specimen.

The meeting proceeded to ballot for the election of a Fellow, and the Chairman stated that Captain James Player, of 16 Dorset Gardens, Brighton, was unanimously elected a Fellow.

INFORMATION BUREAU.

The following motion by Captain Hamilton Kirk stood upon the agenda paper:—

> "That the Council of the National Veterinary Medical Association be urged to set up an information bureau, which would be competent to guide and advise all graduates seeking posts in the Colonies or abroad as to cost of living, rent, servants, the climate, prospects of promotion, pensions, adequacy of salary, and other details connected with any appointment."

The CHAIRMAN called upon Captain Hamilton Kirk to propose his resolution.

Captain HAMILTON KIRK, in proposing this resolution, said it was not long since Professor Hobday raised anew this question of whole-time salaries, when the resolution which he put to the Mid-West and South Wales Division was carried unanimously. He was putting a similar resolution before them that evening, and trusted that it would meet with a similar fate. They had doubtless all read in the issue of the *Veterinary Record* for March 18th a letter upon the subject of salaries of whole-time veterinary appointments. In that letter he quoted one which he had received from India indicating the very high cost of the bare necessities of life out there, and showing how very essential it was that those who applied for these Colonial appointments should be better informed as to the conditions they were likely to encounter and the comparative value of the salaries offered. He spoke from rather bitter experience, as, at the time he made his own application to the India Office, he had no real idea of the purchasing value of the rupee in India, and what was more important, he could find no reliable source of information. The India Office could, of course, impart a good deal of information if it would condescend, but even then he feared it was unduly biassed, and not calculated to put the graduate in possession of the full facts. In order to fit himself for the post he sought, he decided to take a post-graduate course, and was obliged to go to Edinburgh for that purpose. Travelling expenses, fees, and residence for two months away from home were costly items, and after it all he discovered the post was not sufficiently well paid to give it any further consideration. The climate, and conditions pertaining to housing accommodation, rent, etc., in certain parts of India or Africa, and the suitability of these districts for the residence of white women were among some of the questions which sorely exercised him. He thought the great majority of members of the National were agreed that in too many cases the salaries offered to veterinary officials were not only inconsistent with the maintenance of that social position which was so essential abroad, but were a positive insult to a professional man. As examples of this they had in British Guiana the veterinary officer's salary at £300 per annum, whilst the Superintendent of Botanic Gardens received £400 and the Forestry Officer £500. The boycotting of such underpaid appointments appeared to be impracticable, since he supposed there would always be members who would accept these posts if others refused them. They could not be forbidden to do so, and the only alternative would seem to lie in some campaign of publicity undertaken by the N.V.M. Association, by which graduates would be made acquainted with the conditions pertaining to undesirable appointments. There was never a more propitious time than now for this good work to be taken in hand, as, owing to the still decreasing employment of the horse, in towns at least, young graduates were more than ever forced to seek fresh spheres for their activities. He accordingly submitted his proposition.

The CHAIRMAN asked if Captain Kirk would agree to some slight change before the last word in his resolution, so that the words read "any such appointment."

Captain KIRK agreed to the suggestion.

Mr. BYERLY said the motion had been brought before them in an interesting and eloquent manner by Captain Kirk, but nothing he had said had tended to alter his opinion that the proposition was quite

unnecessary, that it was impracticable, and that he was ill-advised to bring it forward for discussion. He was under the impression that the National Veterinary Medical Association was not a wealthy corporation—in fact, that the finances were in such a condition as not to make the office of treasurer a very enviable one, but he noticed that throughout Captain Kirk's speech not one mention was made of expense. No allusion was made to that at all; but if they were going to set up an information bureau they would require a staff to work it and where, he asked, was it to come from? Unless they could find men sufficiently altruistic to undertake these duties in an honorary capacity, they would have to find people to whom salaries would have to be paid: and as posts in the Colonies and abroad would not become vacant at stated times, the bureau would have to be in operation continuously, and that would certainly mean a considerable amount in expenses. But why should graduates whose love for their Motherland seemed to be only measured by their eagerness to leave it be the only ones to be considered? In Great Britain, which, he thought, had the first claim upon the services of her graduates, conditions varied immensely in different localities, and graduates had to find out for themselves what were the prospects before them when they accepted any appointment or commenced practising in any district. He understood that about 13 per cent of the members of their colleges resided outside these Islands. That surely was a goodly number, but whence came the advice for them when they started to go forth to their work? According to Captain Kirk, they ought to be looked upon as being in an extremely miserable condition, and the members ought to pour upon them their compassion, but he would not be a party to any such procedure as that, because he knew full well that they would be very much insulted. It seemed to him that nowadays many young men expected to get to the top of the financial ladder without going through the operation of climbing the first rounds. He noticed that Captain Kirk had particularised his requirements, and he felt sorry to think that they almost all referred to lucre. It could not be denied that many men filled positions principally for the love of their work, knowing all the time that their emoluments would be scanty. Research workers and others who had done most good in this world had not been those who always kept mammon in the foreground. Besides, before any advice could really be given to a graduate as to the part of the earth that he should select for his domicile, the advisor would have to be perfectly cognizant of that graduate's bodily and mental condition, because it was notorious that all men did not succeed equally well in any position, as some were more energetic and had more tact than others. Then in regard to the cost of living, that was greatly influenced by the nature of the individual, and what would satisfy one would not suffice for another. It seemed to him strange that they should be asked to establish an information bureau to tell a graduate what sort of a climate he would meet with in any part of the world he might care to visit, because surely that should have been learned at school, and even if he had forgotten his geography, he could get all the information he required from Whitaker or an ordinary encyclopædia, and at any rate as far as our own Empire was concerned, all information could be got from onr Agents-General and from the Crown Agents for the Colonies, because he believed they were always ready to give any that was required. He strongly opposed the motion, but he hoped that he would not be considered as simply a destructive critic. There would be no foundation for such an accusation as that, because there was none more mindful of the troubles that beset them as a profession than he was, and during the many years he had livsd in the profession it had often been a sad thought with him that *esprit de corps* amongst them was not very strong, and instead of their urging the National Veterinary Medical Association to set up such a bad scheme as this it would be better for them to urge them to formulate some plans which would have the effect of binding them more closely together, so that they could oppose a substantial front to the enemy. He really did not think that they would ever obtain the position that they ought to have in the estimation of their fellow citizens until they remembered more constantly that on their banner were the words *Vis Unita Fortior.*

Major-General Sir LAYTON BLENKINSOP said his experience out of England might be of value in considering the question before the meeting. The last speaker had said: "Why not have a bureau of inquiry for the United Kingdom?" Well, anybody could go down to a place in the Uuited Kingdom and institute his own inquiries and a third-class fare would bring him back. His experience of overseas appointments was that a young man took up an appointment, went overseas, and was bound to that appointment. He had seen a good deal of what might be termed thoughtlessness amongst the graduates of the profession, in cases where they had accepted appointments because they considered that the pay was very good, without considering the circumstances under which he would be called upon to live. Now they were told that the standard of living depended on the man himself. But any one who had served in the Colonies or in India knew perfectly well that there was a certain standard of living which had to be maintained. It did not matter whether a man was underpaid or not, he had got to live in a certain way, and maintain a certain status if he was going to keep himself in the social position which a representative of a profession such as theirs should occupy. He could not keep his expenditure below a certain level, and unless that man kept his standard of living up to those with whom he was associated he would have a very uncomfortable life. He supported what Captain Kirk said about the necessity of having somewhere to go to get information. It appeared to him that all that was required was for the National to have a roll of a certain number of people who would be willing to supply accurate and up-to-date

information to whom members making enquiries could be referred, or to whom a candidate for an oversea post could go in order to get any information he might require. His own experience was that the cost of living overseas had gone up enormously and it was very important that the people to whom candidates were referred should have up-to-date information on the subject, because if the information was out-ot-date it would be worse than useless. He was probably a little pessimistic in regard to the number of these appointments which would eventually be available. Numerous oversea schools had been set up for educating men in the veterinary profession. There was now a school in South Africa which would probably supply the whole of the veterinary requirements of Africa. It had a five years curriculum and university matriculation. In addition there were schools at Cairo and in Punjab which had a university matriculation. Canada did not require our graduates because they had their own schools, and the same could be said of Australia. Therefore he was afraid the openings overseas would be limited in the near future, but whatever openings there might be it would be to the advantage of the profession to assist candidates considering these appointments by giving them accurate and up-to-date information regarding the cost of living and the social status they were likely to find waiting for them in the countries where appointments might be offered.

Colonel MOSLEY remarked that anyone would think that from some of the statements that had been made that the members of the Council of the N.V.M.A. were out of touch with the profession. This motion was an Imperial question, and this Society sent representatives to the National Association. Although he agreed with Captain Kirk that this question was a very important one he did not agree with the suggested procedure. He thought they ought to approach the representatives of their Society on the National Veterinary Medical Association in a different way. The National was really the House of Commons and they were the Borough Council, and he did not think they ought to send such a motion to the Council of the N.V.M.A. as coming from that Society. It would be better for their councillors on the National to represent them or to let the matter stand over until the Annual Meeting of the National. He was in agreement with the cause of the graduates but at the same time he did not agree with the procedure suggested.

Mr. BUXTON said that all Secretaries of Local Associations had recently been asked, when they forwarded a resolution such as the one before the meeting, to coach their representative on the Council of the National. What usually happened was that a resolution of this sort was sent along without particulars or details from the Division forwarding them, and the National Council had really no means of judging the value of the resolution. A request was sent out to the Secretaries of the Association asking them either to send a *resumé* of the discussion or to coach their representatives, and if that were done, they would certainly get over the difficulties which Colonel Mosley had raised. He quite agreed that the Annual Meeting was an excellent place at which to bring forward a matter of that sort, and he would like to remind them that that Annual Meeting was quite well attended and a considerable amount of work was done. If they adhered to the machinery which was now in force the difficulties which had been mentioned would be overcome to a large extent.

Captain DUNLOP-MARTIN said his experience when he was Assistant Bacteriologist to the Imperial Government of India at Muktesar was that if a man was married and had to support a family on the pay which was offered and which he understood had not been very materially increased, it was a very hopeless outlook for the future overseas, and he had never regretted the fact that he had resigned. He certainly thought that some means of getting information as to the cost of living and particularly as to the status of the profession in the part of the world where one was going to should be available to the candidates for the post. It was an absolute fact that if you did not keep up a certain standard you were out of it socially, and how some of the members of the departments were keeping their end up and how they managed to exist in any decency, he could not imagine, and he thought they must be having a very thin time indeed.

Professor HOBDAY supported Captain Kirk's resolution. He considered that they certainly needed very much information of the kind which had been referred to, and the National Veterinary Medical Association was the body most likely to help them. It was no use for them to wait until the Annual Meeting because they could not afford to wait twelve months before discussing this matter. It was only by putting the resolution forward that they could do any good. If they carried the resolution it would show the urgency of the matter, and would strengthen their position.

The CHAIRMAN asked Mr. Buxton whether, if the resolution was passed, it would be in time to go before the Council at the next day's meeting.

Mr. BUXTON thought the matter would not be on the agenda.

The CHAIRMAN remarked that the matter was coming before the Council of the National on the following evening.

Captain KIRK replied to the points raised by Mr. Byerly in the discussion. He said that when *he* was at school he did not learn much about *all* the climates in the world, and although it was quite possible to go to the Crown Agents when one wanted to know what a certain climate was, the Crown Agents knew very little about veterinary appointments, and they could tell them nothing as to what their prospects were in regard to business or anything else. As regards Mr. Byerley's astonishment that any graduate should wish to leave the Motherland, it should be borne in mind that the Motherland had hitherto been the main source of supply of veterinary officers, and would doubtless continue to be so until such time as the various Colonies could produce their own men. He did not know that there was room for

everybody at home and considered there must always be some overflow into other parts of the Empire. He had before him an official "Appointments List" issued by the Colonial Office which at present showed a fair number of appointments open to veterinary surgeons. Many of those posts, however, were very poorly remunerated. Mr. Byerly had said that graduates must find out for themselves, but that was not very fair to a young man who was beginning his career, and the first thing he wanted to do was to become possessed of full information before he took any irrevocable step; and why should he be denied this information? Was such a suggestion consistent with Mr. Byerly's complaint of the lack of *esprit de corps* in the profession? Surely this would be better strengthened by helping each other in this and other matters. Perhaps he was wrong in calling it an "information bureau" in his resolution, but probably the National could collect information from people on the spot and pigeon-hole it, and then, when a man wanted information, he could be referred to some person or the other who could give it him. Mr. Byerly had regretted that Captain Kirk's remarks had been pervaded throughout with allusions to "lucre." Nevertheless Captain Kirk felt sure that no single person in the room (with the possible exception of Mr. Byerly) was in business purely for the love of it, and in reply to this criticism he could only say that he, at any rate, was not in business for the benefit of his health, but for what he could get out of it, and the least they could do was to tell a young fellow all they could about the place to which he was going, the position he was to occupy, and his financial prospects. Opposition to the resolution had apparently emanated from a single source, and as far as Captain Kirk could see, was based entirely upon the question of cost. He was inclined to agree that some slight expense might perhaps be incurred, though, doubtless, means could be devised to reduce this to a negligible quantity.

The CHAIRMAN put the resolution, and announced that it was carried without dissention but that everybody did not vote.

It was further agreed that the resolution should be forwarded to the General Secretary of the National Veterinary Medical Association.

Mr. F. H. STAINTON, F.R.C.V.S., proceeded to read a paper on "Urinary Calculi in the Dog and Bitch," which was received with applause.

(Mr. Stainton's paper, together with the ensuing discussion, receive separate publication.—ED.)

Mr. FORMAN proposed a vote of thanks to the lecturer.

Professor WOOLDRIDGE seconded the motion, which was carried unanimously.

Mr. DAVIS presented a specimen of arteritis in a gelding and the specimen was briefly discussed.

The proceedings then terminated with a vote of thanks to the Chairman.

J. F. MACDONALD, *Hon. Sec.*

Army Veterinary Service.

LONDON GAZETTE, WAR OFFICE—REGULAR FORCES.

May 2nd.—Supernumary Captain W. M. Heavey is restored to the establishment (December 12th, 1921).

May 12th.—Captain R. H. Knowles is seed. for service with the Egyptian Army (March 28th).

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaught'd as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange. Outbreaks reported by the Local Authorities.	Parasitic Mange. Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN.	No.	No.	No.	No.	No.	No.	No.	No.	No.*	No.	No.	No.	No.
Week ended 6th May, 1922 ...	...	...	15	15	4	150	...	...	22	27	5	21	5
Corresponding Week in 1921	...	...	6	6	...	...	...	...	31	37	7	27	13
1920	...	...	10	10	...	128	...	...	61	89	4	55	16
1919	12	...	3	4	...	...	1	2	128	219	2	50	15
Total for 18 weeks, 1922 ...	...	...	242	266	1087	52453	...	...	628	929	399	414	148
Corresponding period in 1921	18	1	220	259	27	2657	3	6	1238	1931	358	425	127
1920	4	...	176	209	42	2432	9	16	2186	3808	271	795	269
1919	67	2	67	92	19	1033	6	30	2704	5298	209	472	164

NOTE.—The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

IRELAND.													
Week ended 6th May, 1922 ...	...	...	...	...	...	...	...	...	Outbreaks ...	6	12	14	
Corresponding Week in 1921 ...	...	...	...	...	...	...	...	...	1	1	1	1	
1920 ...	...	...	...	...	...	...	...	...	4	3	...	1	
1919 ...	...	...	...	...	...	...	...	...	1	...	...	...	
Total for 18 weeks, 1922	...	...	...	...	...	...	...	...	52	104	103	559	
Corresponding period in 1921 ...	...	...	2	41	...	...	...	...	38	130	23	163	
1920 ...	1	1	...	...	1	3	60	142	4	16			
1919 ...	...	...	...	...	1	1	57	139	16	57			

NOTE.—The figures for the current year are approximate only.

NOW READY.

CANINE DISTEMPER

ITS COMPLICATIONS, SEQUELÆ, AND TREATMENT,

By HAMILTON KIRK, M.R.C.V.S., F.R.S.M.,
Capt. R.A.V.C. (T.F.).

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